

## ABSTRACT

The present invention provides a system, method, and applications for providing personalized user experiences based on the use of a core ontology and inferencing over the ontology using rules provided by a domain expert. The population of users may be known to a commerce or information service from external and internal user data sources. Information (data) about this population is brought into a knowledge warehouse designed for on-line analytic processing, and potentially data marts. Data can be sourced from external databases in batch or streaming mode and enhanced with real-time click stream events from internal observed user interactions. A reference ontology is either loaded into the system or defined via a domain expert. The ontology forms the central reference point for data enrichment and precise personalization. Characteristic data is tagged in accordance with direct reference to the nodes of the ontology and may be enhanced via inferencing techniques. This results in enriched and more precise data tagging and equates to discovery of interest domains not directly observed in the initial source data. Definitions of communities can be embedded in the reference ontology thereby allowing the rapid assignment of individuals to collaborative filters or discovered via statistical means using the enriched attributes. Discovery can be fed back into the ontology to add extensions to the ontology. The same reference ontology is used to tag content, which results in a consistent tagging discipline for data and content centered on the reference ontology. Using inference techniques based on the ontology, content may be enriched to discover attributes not explicitly announced in the content descriptions. The enriched data may be mapped to the enriched content resulting in a deeply personalized user experience.